Environmental Studies: UNIT I—CAUSES

**EQ 1.1 What is climate change?/ EQ. 1.2 How are human actions and choices contributing *to climate change?***

**Understandings**:

1. *Students will understand the process involved in the greenhouse effect./ Students will understand how human actions are influencing the greenhouse effect.*
2. *Students will understand how carbon cycles within the environment./Students will understand that, i*In the modern era, we cannot reasonably avoid having a carbon footprint
3. *Students will understand how the climate has cycled historically./* Historically, people have always had a “carbon footprint” since the age of the discovery of fire, but the human impact on climate change was negligible until the industrial era.
4. *Students will understand the various sources of evidence scientists use to investigate climate./ Students will understand that current climate change evidence increasingly points to humans having an impact*

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| Students will know that **greenhouse gases** in the **troposphere** reemit solar radiation which produces a habitable climate. | Students will know that amount of man-made carbon emissions has grown “exponentially” since the dawn of the Industrial Revolution and esp. since the late 19th century. |
| Students will know that carbon cycles between various **sources** and **sinks**. | Students will know that all man-made materials/objects contribute to their “carbon footprint” in whatever they do. |
| Students will understand the various ways human actions increase green house gases by reducing sinks in the carbon cycle. | Students will know the “carbon footprint” of their favorite activities. |
|  | Students will be able to explain, orally, in 1-2 minutes, how a randomly chosen activity has a carbon footprint. |
|  | Students will be able to use online resource to calculate the carbon footprint of an assigned activity |